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INFORMATION OPERATION / INFORMATION WARFARE MODELING AND SIMULATION

Raymond Buettner

The Institute for Joint Warfare Analysis
Naval Postgraduate School
Monterey, California

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INSTITUTE FOR JOINT WARFARE ANALYSIS
NAVAL POSTGRADUATE SCHOOL
Monterey, California

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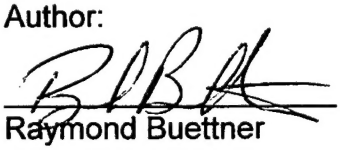

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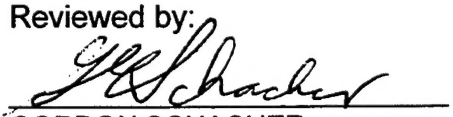

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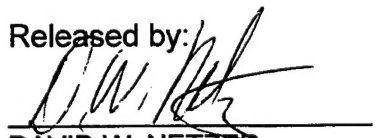

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13. ABSTRACT (Maximum 200 words.)

Information Operations have always been a part of warfare. However, this aspect of warfare is having ever-greater importance as forces rely more and more on information as an enabler. Modern information systems make possible very rapid creation, distribution, and utilization of information. These same systems have vulnerabilities that can be exploited by enemy forces. Information force-on-force is important and complex. New tools and procedures are needed for this warfare arena. As these tools are developed, it will be necessary to provide education and training into their use. This project combines research to develop capabilities combined with concurrent development of instruction materials.

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Information Operations Information Warfare

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Progress Report

Information Operations Research and Instructional Material Development

Abstract:

Information Operations have always been a part of warfare. However, this aspect of warfare is having ever greater importance as forces rely more and more on information as an enabler. Modern information systems make possible very rapid creation, distribution, and utilization of information. These same systems have vulnerabilities that can be exploited by enemy forces.

Information force-on-force is important and complex. New tools and procedures are needed for this warfare arena. As these tools are developed, it will be necessary to provide education and training into their use. This project combines research to develop capabilities combined with concurrent development of instruction materials.

This document is a number of brief reports on the progress on this continuing project.

10 October 2000

IO/IW Modeling and Simulation Research Status

Principal Investigator: LT Raymond Buettner, USN

Objectives/Status:

1. To examine the spectrum of current modeling and simulation efforts.
   Status: This effort has identified several new models for consideration including SWARM and Blanche. This will be an ongoing effort with no defined end state.

2. Attempt to identify existing models/simulations that are/may be useful to IO/IW planners.
   Status: SIAM and ViteProject had been previously identified as potentially useful for IO/IW planners. SWARM, ORGCON, Blanche and a new reflexive modeling tool developed by the NGIC have been identified as potentially useful.

3. Evaluate the feasibility of selected models/simulations for IO/IW applications.
   Status: SIAM and ViteProject had previously passed initial feasibility examination, SIAM was used for thesis efforts (in the IO arena) by 4 students and ViteProject is the commercial implementation of VDT which has been evaluated by a student as a directed study effort.

4. For selected M/S, develop recommended concept of operations to include intelligence requirements, operational concept and limitations. (This is viewed as appropriate research for a Master's thesis at NPS.)
   Status: Funding from this work directly supported three students working on two classified theses for a combatant CINC. It also supports ongoing thesis work by 11 students working for three combatant CINCs and the JIOC. Theses include recommendations regarding the suitability for operational use and intelligence requirements. Most work has focused on a unique applications of the SIAM tool.

5. For those M/S that demonstrate sufficient applicability to current national security requirements, conduct full-scale demonstrations for interested CINCs/Agencies.
   Status: Funding also supports current thesis work by 11 students for four combatant CINCs and the JIOC using SIAM. Work is also underway regarding the utility of ViteProject for evaluating various structures for the IO Cell. Additionally a portion of the funding was extended into the first quarter FY01 to support a SIAM workshop to increase the focus on this tool and its application to IO efforts.

6. Use the knowledge gained to create and maintain an elective course for the IW and ISO curriculums.
   Status: The results of this research have already had an impact in the classroom. A classified IO M&S exercise involving SIAM has been added to the IW-3101 *Principles of Information Operations* course, a seminar has been scheduled for the Security and Intelligence Curriculum and a draft course proposal for influence modeling has been prepared.

Comments:

Currently there is a high demand for SIAM related support. In addition to completed work for USPACOM focused on China and India the JIOC has requested NPS students work with their CINC support teams to support IO efforts for USCENTCOM, USEUCOM, USSOUTHCOM and USFK. Students from IW, IST and ISO are pursuing these efforts.

A SIAM workshop scheduled for 6-10 November will provide the opportunity for additional faculty involvement as well as provide training for the Systems Technology Battle Lab personnel and students. This workshop will also provide thesis opportunities for a broad group of disciplines and curriculums including IW, SO, ISO, CS, NSA and others.

Additional planned research using SIAM includes scenario development for Fleet Battle Experiments in support of Naval Warfare Development Command (NWDC) and efforts to use SIAM to support Operations Plan/Order development in support of the Joint Information Operations Center (JIOC). Additional SIAM thesis work is underway which aims to provide decision support in the Information Security arena. This effort has also been supported by SPAWAR and NSA.

Although initial funding for the JWAC/NGIC portion of the proposed collaborative arrangement with the Joint Warfare Analysis Center (JWAC) and the National Ground Intelligence Center (NGIC) was not available, this effort is still viewed as desirable. The NGIC representative and the JWAC representative have been invited to the SIAM workshop to finalize the nature of this effort.

Stanford's ViteProject and Duke's ORGCON were used to support classroom learning objectives in CC-3000 *Introduction to C4I Systems in DoD.* This classroom effort is under evaluation to determine its effectiveness. Additionally two students are using the ViteProject software to design the optimal organizational form for a national IO organization. Viteproject is also being used to compare various suggested forms of the JTF IO Cell.

Completed Thesis Work:

Modeling Information Operations: Engagement of the Decision-making Infrastructure of China - LCDR Kocher, USN and CPT Kerr, USMC

Modeling Influences Affecting India's Use of Nuclear Weapons - LT Dry, USN

Each of these theses was written at the SECRET level.

Thesis Work In Progress:

Modeling Influences Affecting Pakistan's Use of Nuclear Weapons - LCDR Kidwell, USN and LT Jurkoic, USN

A Database of Adversary Decision Makers - LT Ward, USN

Media Influence Modeling in Support of OPLAN Development* - CPT Leweling, USAF and LT Giangrasso, USN

Automated and Predictive External Threat Assessment for Computer Network Defense* - CAPT Ginn, USA

Prioritization of Information Assurance (IA) Technology in a Resource Constrained Environment: An evaluation of the Situational Influence Assessment Module (SIAM) used as a decision template application - MAJ Brodhun, USMC

Proactive Website Design for Perception Management* - LCDR Flowers and LT Thompson

Modeling Influences Associated with Drug Production and Trafficking* - MAJ Garrett, USA and LT Himes, USN

*Tentative title.

Examples of Deliverables Included as Enclosures:

1) Thesis Abstract: Modeling Influences Affecting India's Use of Nuclear Weapons
2) Conference Abstract: An Examination of Alternative Joint Task Force Structures to Improve Information Operations Performance
3) Power Point Presentation describing IO M&S Effort (Aug 00)
4) Syllabus for IW-3101 course that incorporates lessons learned from this research
5) Examples of DL version of IW-3101 which uses the SIPRNET to provide a module on SIAM uses for IO.

MODELING INFLUENCES AFFECTING INDIA'S USE OF NUCLEAR WEAPONS (U)

David W. Dry-Lieutenant, United States Navy
B.A., University of Missouri-Columbia, 1993
Master of Science in Systems Engineering–September 2000
Advisor: Raymond R. Buettner Jr., Information Warfare Academic Group
Second Reader: James J. Wirtz, Department of National Security Affairs

(U) Since India and Pakistan became nuclear weapon states, the threat of a nuclear confrontation in South Asia has increased. Continuous fighting between the two countries for over fifty years involving the Kashmir region has raised the question of whether or not nuclear weapons will be used to settle their differences. Both countries have demonstrated the ability to produce or acquire nuclear weapons and the means to deliver them. Crossing of the Line of Control in Kashmir by either India or Pakistan and the possibility of escalation associated with conventional war has increased the chance of a nuclear war.

(U) Utilizing a computer program known as Situational Influence Assessment Module (SIAM), an influence net model is constructed to ascertain the likelihood of India using nuclear weapons. The model is then validated by theater intelligence agencies. SIAM is used to identify critical influences known as pressure points, which may be vulnerable to manipulation as part of an Information Operations (IO) plan. This manipulation could affect India's decision to use nuclear weapons.

DoD KEY TECHNOLOGY AREA: Computing and Software, Modeling and Simulation

KEYWORDS: India, Nuclear Weapons, Modeling and Simulation, SIAM, Information Warfare, Perception Management

An Examination of Alternative Joint Task Force Structures to Improve Information Operations Performance

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Code IW/BR
589 Dyer Rd. Room 203C
Monterey, California 93943-5142

Submitted for the Information Operations or Modeling & Simulation subject areas.

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An Examination of Alternative Joint Task Force Structures to Improve Information Operations Performance

Abstract

The Joint Task Force (JTF) Commander, Operation Allied Force (OAF) has indicated a need to improve the utilization of information operations (IO) in the joint task force. Briefings with the IO Cell Officer identified organizational structure issues that resulted in less than optimal performance. This paper develops an organizational model of the JTF and simulates its performance relative to several alternative configurations using VitеProject, an organizational modeling and simulation tool developed at Stanford University. A comparison of the alternative structures and the existing structure is made. Changes to the existing structure are recommended.

Background

A brief description of Information Operations is provided. The JTF IO structure, as delineated in JP 3-13, is described.

OAF was the first application of the JP 3-13 IO structure in combat. A briefing provided by Admiral Ellis, in referring to the IO effort, states that IO was "At once a great success...and perhaps the greatest failure of the war." It goes on to claim that "Properly executed, IO could have halved the length of the campaign." Among the flaws in the execution of IO was the claim that although good people were involved, those assigned were too junior and from the wrong communities. The adhoc nature of assembling the JTF was also faulted and a recommendation was made for an JTF "in a box".

The IO Cell Officer in recent briefings and reports has indicated that the JTF IO cell members were not widely trained in IO and that most were not read into existing programs that impacted their ability to contribute to the mission.

These observations and criticisms justify examining the current structure and seeking improvements in the way the IO Cell functions in the JTF.

The Modeling Tool

VitеProject was developed by Stanford University's Virtual Design Team research group and is the commercial version of the university's VDT modeling and simulation tool. VitеProject is unique in that it rigorously relates technical activities to the cognizant human organizations so that complex industrial processes can be accurately modeled. VitеProject can be used to identify inefficiencies in the organizational design which can be altered to improve quality, cost and/or scheduling performance. Since 1994 VitеProject and its VDT predecessors have been used by corporations such as PG & E, Fluor Daniel, Intel and Lockheed Martin to reduce time to market for complex industrial projects.

VitеProject simulates the actions and interactions of *Actors* performing *Activities* associated with the modeled process. Each *Actor* has variable attributes including *Task Experience*, *Organizational Role*, *Number of Participants* and *Skill Set.*

Each of these attributes has a relatively limited number of possible variables with the exception of the self-explanatory *Number of Participants*. *Task Experience* variables are high, low or medium as the variable associated with each *Skill Set.* The individual skill sets are set by the VitеProject user and typically include the various engineering disciplines such as mechanical, electrical, structural and civil. *Organizational Role* contains variables of Project Manager (PM), Subteam Leader (SL) and Subteam (ST) or workgroup.

Each *Activity* also has a set of variable attributes including *Required Skill*, *Work Volume*, Subtask Size, *Requirement Complexity*, *Solution Complexity* and *Uncertainty*. *Required Skill* is simply the engineering disciplines required for the activity. *Work Volume* and *Subtask Size* are measures of the time required to perform the activity (or subtask) in the desired units. The remaining attributes are all assigned values of low, medium or high.

The real strength of VitеProject lies in its ability to model relationships and interactions between and among the various *Actors* and *Activities*. The model offers choices of *SupervisedBy* and *ResponsibleFor* relationships to define the relations between *Actors*. Relationship selections between *Activities* are *Successor*, *Reciprocity* and *Failure Dependency*. VitеProject uses the relationship among *Activities* to create implied relationships between *Actors*. This means that if an activity that is reciprocal with another activity, VitеProject automatically simulates communications between responsible the *Actors*.

VitеProject has other variables, including meetings and communications priorities which are suitable for modeling the operations of a JTF. The building of accurate models does require the participation of personnel familiar with management science and the processes being modeled.

The Models

The baseline model, the existing JTF IO structure, is described and the results of simulations are provided. An analysis of simulation outputs is described to demonstrate the model's validity in this context.

Additional models are then introduced and the simulation outputs for each are analyzed and compared to the baseline. The alternative models include the baseline model with improved training and experience, a model which simulates the IO Cell responsibilities distributed across the previous (pre JP 3-13) JTF structure, and a model which optimizes IO performance resulting in a completely new structure.

Conclusions

A comparison of all outputs is conducted and recommendations for improving the JTF IO structure are provided.

References

"View from the Top", a PPT presentation constructed for Admiral Ellis, OAF JTF Commander.

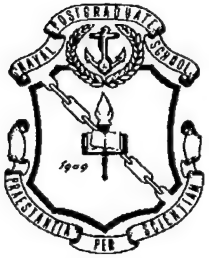
Unclassified conversations with the OAF IO Cell Officer at the Naval Postgraduate School in November 1999.

Jay R. Galbraith, "Designing Organizations", Jossey-Bass Publishers© 1995

Kunz, John C., Tore R. Christiansen, Geoff P. Cohen, Yan Jin, Raymond E. Levitt, "The Virtual Design Team: A Computational Simulation Model of Project Organizations," Communications of the Association for Computing Machinery (CACM) 41 (11), November, 1998, pp. 84-91. [1998 RJ40]

Christensen, L., Christiansen, T.R., Jin, Y., Kunz, J.C. & Levitt, R.E., "Modelling and Simulating Coordination in Projects," IEEE Journal of Organizational Computing, 9.(1), 1999, pp.33-56. [1999 RJ42]

Thomsen, J., Kwon, Y., Kunz, J. C., and Levitt, R. E., "Simulating the Effects of Goal Incongruency on Project Team Performance." Fourth Congress on Computing in Civil Engineering, ASCE, June 17-19, 1997, Washington DC, pp. 643-650 (1997 CP 46]



Computer and Information Sciences and Operations

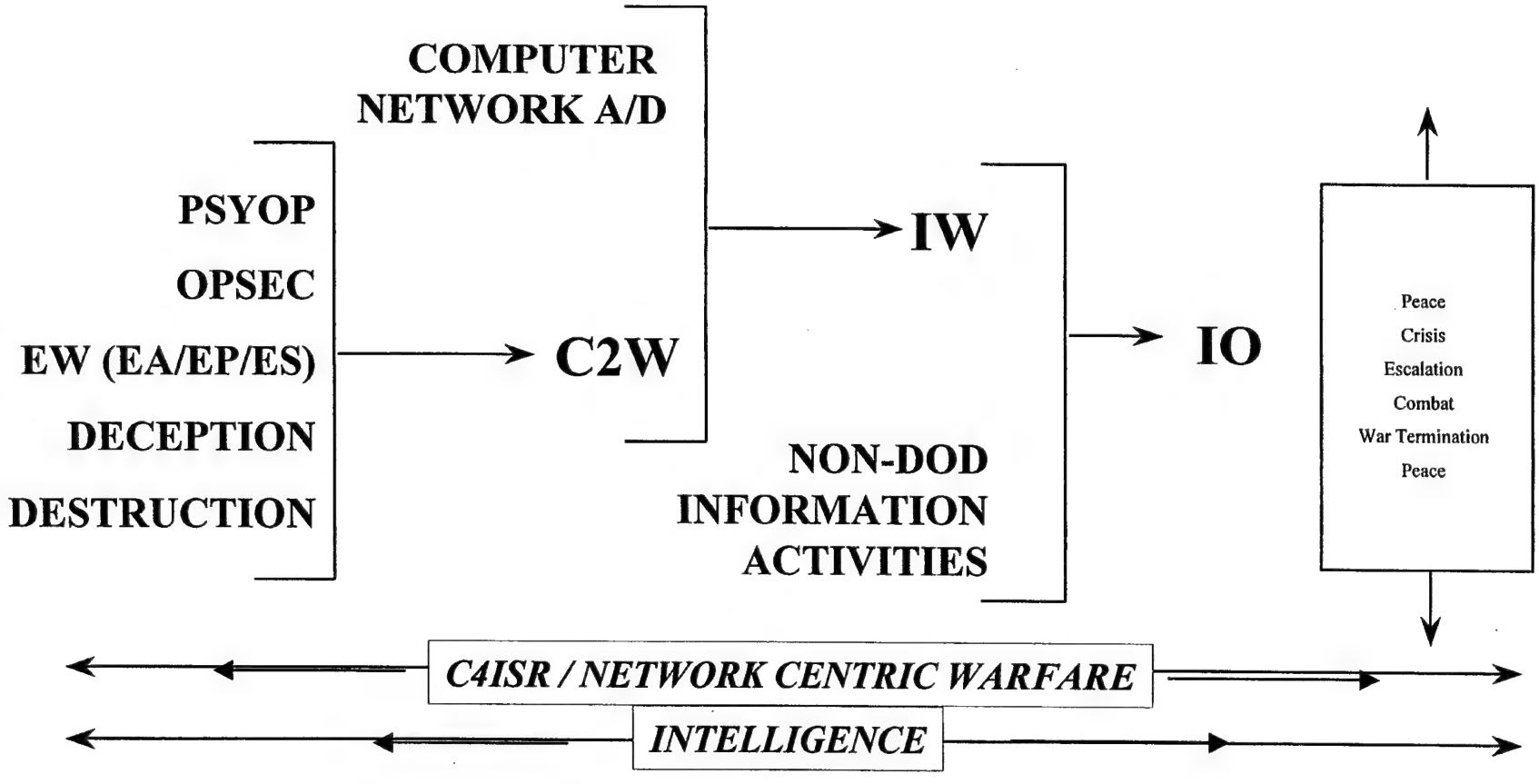
Modeling and Simulation for Information Operations/ Information Warfare

Naval Postgraduate School

Monterey, California

2000

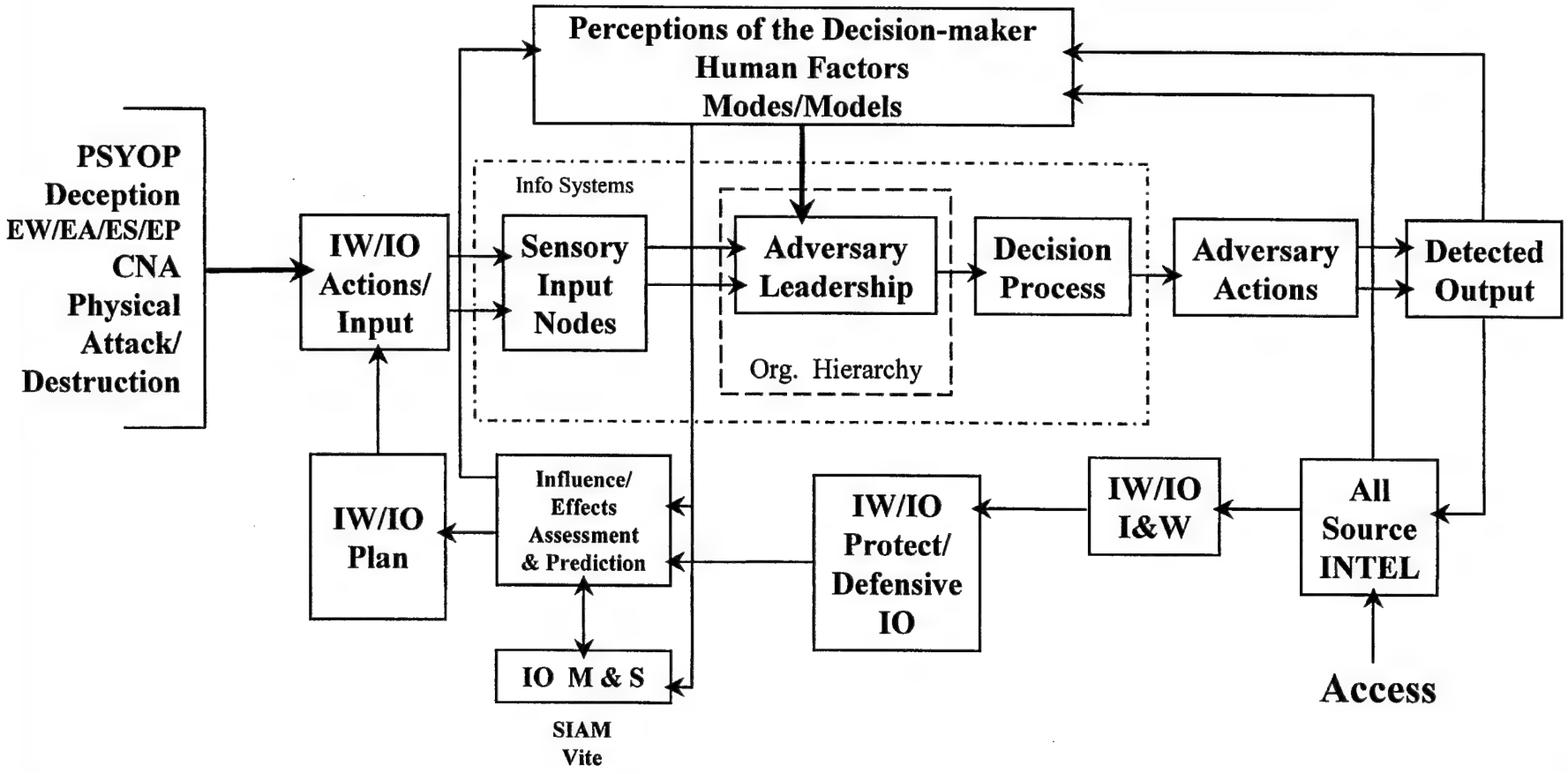
IW/IO DoD/Joint Policy & Doctrine
Joint Pub 3-13 and DoDD S3600.1



IWSE Curriculum

Basics	Applied Engineering	Systems Integration
Mathematics	Waves & Optics	Electronic Warfare Including DEW
Physics	Radar	
Electrical Engineering	Electromagnetics	
Computer Sciences	Statistics	Sensing, Surveillance, Tracking, and Tactical Data Systems, IT
Ops Analysis	Telecommunications	
	SIGINT	
	Weapons Effects	Information Warfare/ Information Operations
	CNA & Computer Security	
	Networks & NCW	
	Computer Network Ops	
	Human Factors/ Human Decision-making	Decision Making

IO/IW Modeling&Simulation



IW/IO Modeling & Simulation

Tools designed by warriors for warriors!

Goal:

To operationalize existing models and simulations in support of IW/IO objectives.

- Monitor the M&S world for models with potential IO/IW application.
- Evaluate feasibility of IO/IW use.
- Validate the model's potential working with the warfighter.
- Develop the methodology and guidance required to use the model in the context for which the warfighter needs the tool.

Current Modeling Work

SIAM is the only model currently being "operationalized"

- Used for student project/thesis work examining WMD development in Iraq
- Used by JWAC and SAIC in several AORs for a variety of purposes
- NPS utilization is different from other organizations
  - Longer time frame
  - Independent construction via interaction with experts in and out of the AOR
  - Validated in theatre by the experts it is designed to assist
  - Built by warriors for warriors

USPACOM Engagement Planning & Assessment

CAPT Jamie Kerr, USMC, LCDR Jackie Kocher, USN
and CAPT J.T. Taylor

Sponsor: USPACOM J-56

Goal: Develop a SIAM model to aide in "tasking" CINCPACFLT (and other component commanders) with specific engagement targets. Also provide a means of assessing engagement activities.

Plan: Two students are identifying those entities in the target country that should be engaged and providing a SIAM model illustrating relative importance of each. A third student is developing the process for relating this model to engagement goals in a meaningful way.

Thesis goal is to create a general version of the model to assist multiple users in identifying high value influence targets in the subject country.

USPACOM WMD Planning & Assessment

Lieutenant David Dry

Sponsor: USPACOM J-56

Goal: Develop a SIAM model to aide in identifying influence targets associated with a specific country's WMD usage.

Plan: Identifying those entities in the target country that should be engaged to reduce the potential for nuclear confrontation, providing a SIAM model illustrating relative importance of each entity.

Thesis goal is to create a general version of the model to assist multiple users in identifying high value influence targets in the subject country.

NSA Information Assurance Model

Captain Chip Brodhun, USMC

Sponsor: NSA-X Group/SPAWAR

Goal: Develop a SIAM model to aide acquisition professionals in decisions regarding IT security purchases.

Issue: Should you purchase access controls, firewalls or encryption software if you cannot afford all?

Thesis goal is to create a general version of the model to assist military commands in decisions of a similar nature.

USPACOM Theater Media Influence Model

Captain Tim Mayer, USA

Sponsor: PACOM J-39 , EUCOM J-39

Goal: Develop a SIAM model to aide IO/IW planners in identifying the most influential media nodes in the CINC's AOR.

Plan: A team of two students will craft a SIAM model of the AOR media flow and develop a process to apply the model to meet J-39s requirement.

Thesis goal is to create a general version of the model to assist all CINCS in decisions of a similar nature.

CINC Information Operations Plan Evaluation

(Proposed)

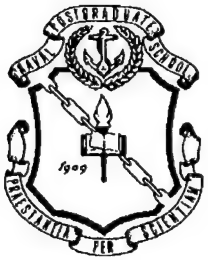
Captain Tara Leweling, USAF and Lieutenant Peter Gaingrasso

Sponsor: PACOM/JIOC

Goal: Develop a SIAM model (or models) which identify and relate IO targets for a specific operations plan and use the assess the adequacy of the plan.

Issue: Creating a methodology for designing and validating a model of the appropriate granularity.

Thesis goal is identify processes which allows IO to be included in deliberative planning more effectively than is currently possible.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PER SCIENTIAM AD PROFECTUM

Questions

?????

IW-3101

Principles of Information Operations

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This course is traditionally taught several times each year at the Naval Postgraduate School in Monterey, California for students working towards a Master's degree. It has been taught in an intensive one week coalition version to allied military officers, as a 3 month long VTE course to surface warfare officers on the East Coast and will be available in a fully asynchronous web based version in FY 01. Other delivery methods or modifications of the course material to suit individual command requirements will be considered on a case-by-case basis. The Naval Postgraduate School is committed to providing quality educational products to the warfighter anytime, anywhere.

SYLLABUS

This course provides a survey of Information Operations (IO) along the time line of peace, to conflict, and back to cessation of hostilities in the Joint/Coalition environment. All of the elements associated with IO are covered including PSYOP, deception, OPSEC, information assurance, infrastructure protection, EW, and destruction. An introduction to the fields of study which form the foundation of IO is provided. Foundation topics include military-civilian relationships, human cognition and decision-making, command and control structures, legal issues, computer and network attack, joint planning process, and intelligence support to IO. A SECRET clearance is usually required but an unclassified version can be provided upon request.

Text: **Information Warfare Principles and Operations** by Edward Waltz. Artech House, 1998.

Joint Doctrine for Information Operations, Joint Publication 3-13, GPO, 1998

Joint Vision 2020, The Joint Staff, GPO, 2000

COURSE OBJECTIVES

1. Foundations of Information Operations

   a. Describe the applicability of the current state of the civilian-military relationship to IO
   b. Describe the use of software tools and modeling and simulation tools for Io planning.
   c. Describe each element of the Observe-Orient-Decide-Act (OODA) loop and the vulnerabilities of each to IO targeting.
   d. Describe the JOPES process and methods for applying to IO.
   e. Describe the difficulties in defining jurisdiction for IO offensive and defensive actions. Discuss international law in relation to IO.
   f. Describe the intelligence cycle and it relationship to IO.
   g. Describe the basic topology for a computer network attack.
   h. Describe the biological process and layered defense models for network defense.
   i. Know the basic layers of infrastructure protection and organizational responsibility for each.
   j. Read and understand Joint Publication 3-13. Define the following terms;
      1) civil affairs
      2) command and control
      3) command and control warfare
      4) communications security
      5) computer network attack
      6) computer security
      7) counterdeception
      8) counter intelligence
      9) deception
      10) defense information infrastructure
      11) defensive information operations
      12) directed-energy warfare
      13) electronic warfare
      14) global information infrastructure
      15) incident
      16) indications and warnings
      17) information
      18) information assurance
      19) information-based processes
      20) information environment
      21) information operations
      22) information security
      23) information superiority
      24) information system
      25) information warfare
      26) intelligence preparation of the battlespace

27) leveraging
28) military deception
29) military operations other than war
30) national information infrastructure
31) offensive information operations
32) operational level of war
33) operations security
34) perception management
35) physical security
36) probe
37) psychological operations
38) special information operations
39) strategic level of war
40) tactical level of war
41) vulnerability
42) vulnerability analysis

2. For each elements of IO (PSYOP/Deception/EW/OPSEC/Destruction/CNA/CND)

   a. Describe the element
   b. Know and apply the process for including the element in joint planning.
   c. Apply the element in a scenario-based example.
   d. Understand limitations and vulnerabilities associated with the element.
   e. Identify the intelligence requirements associated with the element.
   f. Understand how the element is applied in conjunction with the other elements of IO in accordance with Joint, service or command doctrine.

3. Laboratory Work

   a. Demonstrate an understanding of IO legal issues applied to various IO scenarios.
   b. Given a scenario and appropriate background intelligence, develop an IO annex for a NEO.

COURSE HOURS BREAKDOWN

Graduate Credit Version

Hours	Topic
10	Foundations
2	Intelligence
3	OPSEC
3	EW
6	PSYOP
6	Deception
5	Destruction
5	CNA/D
4	Joint Planning
11	Lab

TOTAL: 55 Hours (Plus 80-100 hours outside of class)

Operator Training Version

Hours	Topic
6	Foundations
2	Intelligence
3	OPSEC
3	EW
5	PSYOP
5	Deception
5	Destruction
5	CNA/D
2	Joint Planning
4	Lab

TOTAL: 40 Hours (Plus 6-10 hours outside of class)

IW 3101
(Short Course)
Principles of Information Operations
SYLLABUS

This course provides a survey of Information Operations (IO) along the time line of peace, to conflict, and back to cessation of hostilities in the Joint/Coalition environment. All of the elements associated with IO are covered including PSYOP, deception, OPSEC, information assurance, infrastructure protection, EW, and destruction. An introduction to the fields of study which form the foundation of IO is provided. Foundation topics include military-civilian relationships, human cognition and decision making, command and control structures, legal issues, computer and network attack, systems engineering concepts, and intelligence support to IO.

Text: **Joint Doctrine for Information Operations**, Joint Publication 3-13, GPO, 1998
Joint Vision 2020, The Joint Staff, 2000
Information Warfare Principles and Operations by Edward Waltz. Artech House, 1998.

COURSE OBJECTIVES

1. Foundations of Information Operations

   a. Describe the applicability of the current state of the civilian-military relationship to IO
   b. Discuss the use of modeling and simulation in the development of IO plans.
   c. Describe each element of the Observe-Orient-Decide-Act (OODA) loop and the vulnerabilities of each to IO tactics.
   d. Define systems engineering and describe the systems engineering process.
   e. Describe the intelligence process and how it supports IO.
   f. Know the basic process of organizing a network attack.
   g. Know the basic layers of infrastructure protection.
   h. Read and understand Joint Publication 3-13. Define the following terms;
      1) civil affairs
      2) command and control
      3) command and control warfare
      4) communications security
      5) computer network attack
      6) computer security
      7) counterdeception
      8) counter intelligence
      9) deception
      10) defense information infrastructure
      11) defensive information operations

12) directed-energy warfare
13) electronic warfare
14) global information infrastructure
15) incident
16) indications and warnings
17) information
18) information assurance
19) information-based processes
20) information environment
21) information operations
22) information security
23) information superiority
24) information system
25) information warfare
26) intelligence preparation of the battlespace
27) leveraging
28) military deception
29) military operations other than war
30) national information infrastructure
31) offensive information operations
32) operational level of war
33) operations security
34) perception management
35) physical security
36) probe
37) psychological operations
38) special information operations
39) strategic level of war
40) tactical level of war
41) vulnerability
42) vulnerability analysis

2. For each element of IO (PSYOP/Deception/EW/OPSEC/Destruction/CNA/CND)

   a. Describe the element
   b. Know and apply the process for including the element in joint planning.
   c. Apply the element in scenario based examples.
   d. Understand limitations and vulnerabilities associated with the element.
   e. Identify the intelligence requirements associated with the element.
   f. Understand how the element is applied in conjunction with the other elements of IO.

3. Group Work

   a. Demonstrate an understanding of IO concepts as applied to IO case studies.

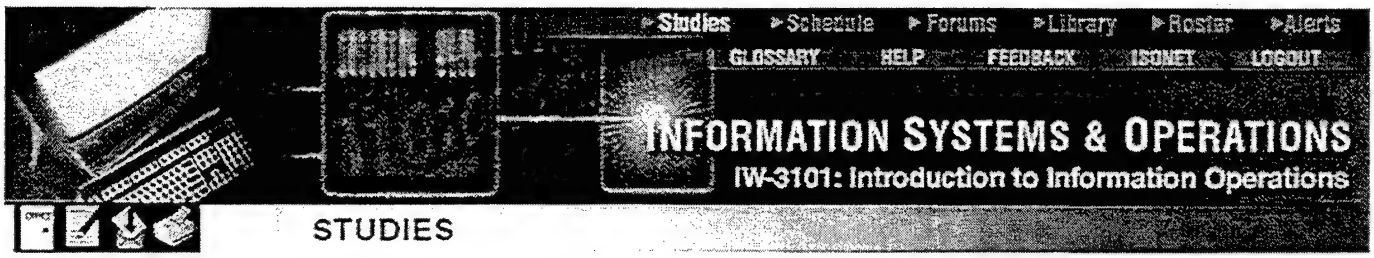
b. Plan a set of coordinated IO actions in the context of a scenario provided by the instructor.

COURSE BREAKDOWN

Hours	Topic
4	Foundations
3	Intelligence
3	EW
3	PSYOP
3	Deception
3	Destruction
7	CNA/D
4	Joint Processes
7	Group Exercises

TOTAL: 37 Hours

Reading Hours: 8



STUDIES

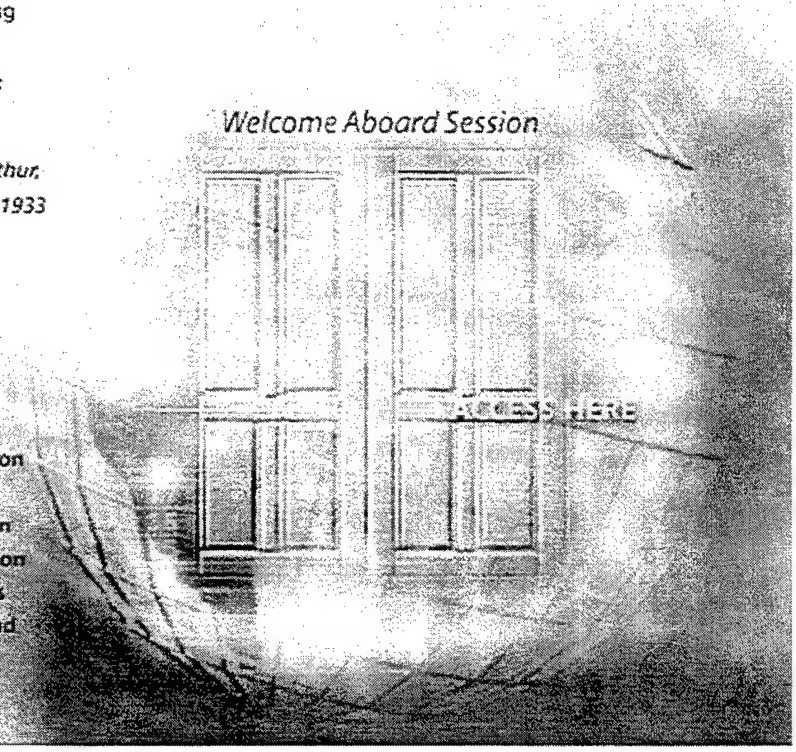
INDOC

Expand All

- Getting Started
- INDOC
  - Welcome Aboard
  - Marching Orders
  - ISONET Tour
- L1-Joint Doctrine
- L2-OODA & C2
- L3-Systems
- L4-Society
- L5-Defensive IO
- L6-Offensive IO
- L7-Grand IO
- Course Wrap Up

"In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military."

—General Douglas MacArthur, US Army Chief of Staff, 1933



DoD Definition:

"Information Operations involve actions taken to affect adversary information and information systems while defending one's own information and information systems. They apply across all phases of operation, and at every level of war."

—Joint Pub 3-13

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IW3101 - ISO - Studies

Getting Started

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(MESSAGES MUST INCLUDE "IW3101" IN THE SUBJECT LINE!)

Website Tech Support: Bob Norris, Teleologic Learning Company, 649.0283, staff@ooda.org

ISO Curric Office Coordinator: Nancy Littlejohn, 656.3339, nlittlej@nps.navy.mil

About the website:
If you are a new user, there are some basic navigation procedures to keep in mind. You are at the course level of the website. There is an institutional level (ISONET) and a public level (where you logged in). Each level displays a number of options across the top navbar. When you select one, further options will appear on the left. You are in the Getting Started module of the Studies category at this time. This is denoted as Studies/Getting Started.

What You Need:
You should be using an Internet Explorer 4.0 or better browser (or Netscape 4.0+) that has been configured with the Macromedia Shockwave and Acrobat Reader plug-ins. In this module, you'll find a topic called, Configuration, which will allow you to check your browser. If you need a plug-in, you'll find links in the digital library under the category called Useful Tools.

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Getting Started

Classified Material:
This course is intended to be beneficial in the performance of your duties as well as an educational experience in its own right. Since IO is a developing discipline it is imperative that we learn what we can from ongoing efforts. As a result IW-3101 has a classified element that relies on the SIPRNET to expose the student to the latest briefings from those who have the day-to-day responsibility of applying this doctrine to the real world.

Due to bandwidth considerations, the classified assignments will consist primarily of reading/researching a subject on the SIPRNET and responding to the professor using SIPRNET email.

You should verify that you have access to the SIPRNET and are able to send email to the professor (LT Buettner) as soon as possible. If you do not have access to the SIPRNET you should contact the professor immediately.

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L2-OODA & C2

"Shortly, you're going to deal with an IO situation in a place called Esperanza. Before you try to decide whether the situation in Esperanza is real or not, let's go over some basics. What an IO cell basically does is what a thousand years ago a battlefield commander would do. Our battlefields are just a lot bigger and more complicated. Listen up while the Master Chief covers the fundamentals."

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L1-Joint Doctrine

Throttle back for just a second...did you **REALLY** read that page? Test yourself. Can you list at least four of the obstacles that were listed without peeking? You should be aware that almost all learners new to this format have to overcome their tendencies to skim text that they read on the web. For some it can be a tough habit to break. Just thought you'd like to know that. Press on.

Andrews out

JP3-13 Joint Doctrine for Information Operations overcame these obstacles, and moreover, it is very reader-friendly. However, because of this, there is a danger that it will be skimmed. That would be unfortunate since it is a very useful resource for concepts, precise definitions, and sanctioned guidance. It is designed to be a well-thumbed, highlighted pub that sits on the desktop within easy reach.

The officer who masters doctrine can speak with authority and confidence. Therefore, this section, provides study questions to assist you in your effort to become acquainted with U.S. Joint IO doctrine. The questions are grouped by chapter.

Joint Pub 3-13 is available in the online library. It is recomended that you download and save this document on your system since you will be using it throughout the course. (Most students print a copy for their use.)

Students should read the questions, read the appropriate chapters in the JP 3-13 and then answer the quiz questions. Students who can answer every study question will have no difficulty with the doctrine examination. This work is open book and will not be graded but will be monitored.

Remember to print out the quiz pages so you can review them for the doctrine examination.

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